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Framing sustainability and climate change: Interrogating discourses in vernacular and English-language media in Sundarbans, India

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1. Local concerns and global frames: Indian climate change discourses

Successful climate change adaptation and developing sustainably are two of the most pressing social, political and scientific concerns of the time (Field et al., 2014; Eriksen et al., 2015, Moser and Boykoff, 2013). Both concepts however, are discursive constructs (Dryzek, 2013; Springett and Redclift , 2015) and over the past two decades, have generated a diverse range of perspectives, opinions, agendas and understandings. These diverse ideas have been engaged in a discursive battle across the media. Agendas compete in the media for legitimation and greater eventual domination of the policy discourses across scales (van Dijk, 1997, Saraisky, 2015). There is evidence that aggregate shifts in public opinion lead to congruent shifts in public policy (Page and Shapiro, 1983). These correlations are higher when the public opinion shift is larger, more stable, or more salient. ("salience" refers to the number of people that answer "I don't know"; fewer "don't knows" means higher salience) (Boykoff and Yulsman, 2013). Analysis of media coverage thus not only helps uncover how certain actors exert greater power and domination over issues such as climate change or sustainable development, it also indicates how certain sub-agendas are set to marginalise other sub-agendas (McCombs and Shaw, 1972) to influence people – specifically in 'what to think about' and not 'what to think' (Cohen, 1963).

Analysing discourses – comprising written and spoken words – helps understand how power flows through culture, politics, and society in shaping the public discourses which in turn shape the terrains of knowledge and public opinion about climate change and global warming (Boykoff and Yulsman, 2013). Many studies on the media coverage of climate change in the past 15 years have shed light on how various actors interact and engage with the issue, and how media create various kinds of discourses about the subject (e.g. Dalby, 1996, Gavin, 2009). These demonstrate how various power struggles and their corresponding interpretations in the media create certain kinds of sense-making and public opinion (Carmichael and Brulle, 2017). However, majority of these studies have focused on the English language media in developed countries. A small number of studies that has examined media coverage of climate change and sustainability in developing country contexts, also remained confined within the English language media (Billet, 2010, Boykoff et al., 2013, Dutt et al., 2013, Thaker and Leiserowitz, 2014; Thaker et al., 2017) (see Fig. 1). This poses an inherent risk of a biased and skewed understanding about what 'traction'[1] climate change adaptation or sustainable development has among people in a specific society, especially those who are the most vulnerable. English language media are aimed at and consumed by a small section of elites across the developing world. In India for example, the regional language press dominates 90% of the newspaper readership and there is only one English-language newspaper in the top ten most-read newspapers (IRS, 2014). (However, by virtue of their elite readership, the English language newspapers have much greater power in setting agendas that in turn dominate national and regional policies.)

Here, major gaps remain in the understanding of how public opinion and policies are shaped in developing countries by media coverage outside of English-language portrayals. Greater analysis of local, vernacular media discourse in developing countries thus assumes importance, along with uncovering local concerns and how the global discourses of sustainability and climate change are reinterpreted and renegotiated by the local vernacular media for the consumption of non-Anglophone world. To achieve this goal, inversion of the entry point into the discourse with a specific vulnerable region (see next section) and how it is represented, what agendas dominate about the region and which are marginalised in the media are analysed. The entire volume of coverage on this specific ecosystem is analysed to understand what gained prominence in the media and why as well as what failed to generate media coverage. This is why the codes (as analytical tools) were developed first in the Bengali language media and then applied to the English language one to understand whether and how much the coverages match or diverge.

Shifting the point of entry to a vulnerable socioecological system instead of keywords (such as 'climate change' or 'sustainable development') is a critical methodological innovation this study attempts in order to uncover how different agendas such as poverty, sea level rise, health, education, erosion, sustainability compete against and interact with each other within the system. A socioecological system (SES), by definition, is a

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[1] 'Traction' here not only means relevance and recall factor of the specific subject but the quality of impression and perception on the subject.

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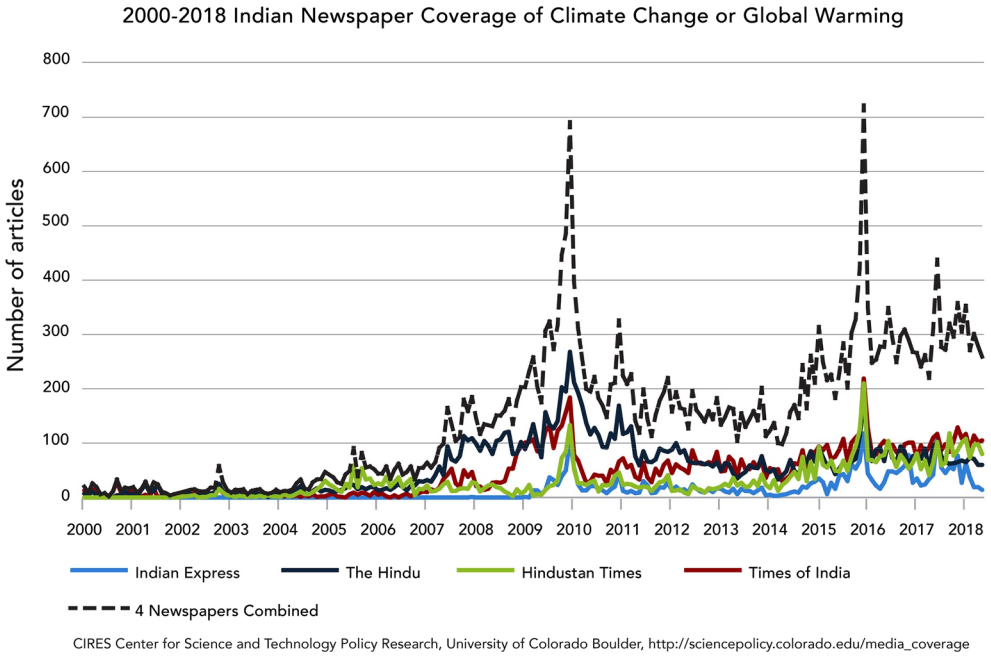

Fig. 1. 2000-2018 Indian Newspaper (English Language) Coverage of Climate Change or Global Warming (Boykoff et al., 2018).

linked system of people and nature that emphasises humans must be seen as a part of, not apart from, nature (Berkes and Folke, 1998). The Sundarbans is one such system as its existing geography is man-made – without embankments along the sea coast and river banks human habitation would not have been possible (Eaton, 1990).

The Sundarbans is a critical global commons, world's largest mangrove ecosystem with highest species density and diversity as well as a global climate change hotspot (Ghosh et al., 2015; Chatterjee et al., 2015; Raha et al., 2012; Hazra et al., 2002). It also has about 4.5 million residents, half of which are critically vulnerable from the impacts of climate change (DasGupta and Shaw, 2015). We disaggregate dominant and marginal strains in the coverage of this SES in both Bengali and English language media and ask: "While people live their lives precariously amidst risks and hazards, poverty and inequality across these socio-ecological systems in the Global South, how much salience and traction does climate change adaptation or sustainable development have here among these populations?"

The discourse analysis carried out on vernacular, local language media attempts to uncover different, more nuanced and grounded concerns. At the same time, the same analysis is conducted on an English language newspaper, owned by the same corporation, to uncover points of divergence and intersections. The findings reveal significance of climate change on peoples' everyday negotiations with the environment (Ingold, 2001; Ingold, 2011). It also helps understanding local drivers of vulnerabilities, risks and hazards and how they are constructed through local stories. Regional language media narrate these local 'stories' and help uncovering various narratives which underlie socio-cultural practices and provide essential ingredients of the process by which humans make sense of crises in public life or feel inspired to work towards solutions (Chakrabarty, 2014). A variety of narratives from across scales – not just products of hegemonic discourse and meta-narratives from the precincts of power – are important to make sense of new situations. Our success in developing globally concerted response to the climate and sustainability crises seem to depend on the degree to which we can uncover different stories (and not just one kind of story or rhetoric), learn from them and agree upon the lessons (ibid id). This is inherently linked to better understanding local cultures that play a key role in framing of mitigation, adaptation and sustainability issues as phenomena of concern to society (Adger et al., 2013). Social and cultural differences have been identified as major causes of tension between normative and analytical stances on resilience for example (Brown, 2014).

A disproportionately Anglophone discourse on a global agenda such as sustainability or climate change, on the other hand, leads to an inherently biased understanding of a situation (Kapoor, 2008), which often disproportionately influences policy discourses and local level actions (Brown, 2014). Exclusively Anglophone representations can detach conceptualisation of climate change and sustainable development from the social sphere allowing the former to be appropriated in the interests of particular ideologies and by specific groups of actors, such as green colonialism and authoritarian regimes, who can exercise greater control and domination over the discourse (Weisser et al., 2014). Already, this is a threat to participatory and concerted approaches to climate change adaptation or sustainable development, notes Watts (2015). The nexus between corporations, experts and global institutions around climate change adaptation – expanding upon a spontaneous market order – offers to merely support the self-organising capabilities of societies as a form of sustainable development (ibid.) and assist 'predict and provide' approach instead of deliberation and inclusive policy processes (Bahadur and Tanner, 2014, Murphy et al., 2011). The market, with the alliance and support of the local and global elites, shifts the responsibility of adaptation to external agents or upon individuals, avoiding questions over socio-political processes of redistribution, entitlements, ensuring governance processes such as fostering capabilities by providing services (health, education, transportation) (Simon, 2009).

This study also uncovers how local language media (re)interpret various global discourses (often from the Anglophone world), explaining how some narratives become hegemonic and how social forces compete with it (Gramsci, 1981) in constructing and maintaining knowledge, norms, and conventions (Foucault, 2008). At the same time, media on its own assist to produce, reproduce, transform and perpetuate geopolitical hegemonies (Strinati, 1995: 169). Climate change adaptation discourse has largely originated in the Northern, Anglophone world (Alemu and Mengistu, 2017), to become hegemonic for developing countries such as India (Isaksen and Stokke, 2014). Dominant approaches to climate change adaptation treats the subject in a top-down manner in order to "govern adaptation rather than trying to contextualize it" (Taylor, 2015). It allies with the international climate policies, often subjugating other (Southern) positions or approaches (Isaksen and Stokke, 2014), and marginalising certain discourses (e.g. radical green) while bolstering certain others

(win-win rhetoric) (ibid.). Such projects of governance do not reveal the salience of climate change and sustainable development in specific socioecological systems and on specific communities but attempts to create and legitimise the meta-discourse. This is why, analysis of local language media assumes importance and significance – to uncover real, local stories and narratives.

2. Geography of the marginal: Indian Sundarbans

Since the primary unit of this discourse analysis is not agendas such as climate change or sustainable development but a socioecological system, its description is important to understand the challenges it faces. The Indian Sundarbans is an archipelago comprising 104 islands (52 inhabited) located in the Ganga-Brahamaputra-Meghna delta in the mouth of Bay of Bengal, surrounded by protected forests. This is a prime habitat of the Royal Bengal Tiger and many other endangered animal and plant species (Ghosh et al., 2015). This UNESCO world heritage site is spread across approximately 26,000 km^2 between India and Bangladesh. The region is traversed by an intricate web of rivers, rivulets, canals and swamps, some of the islands are very difficult to reach despite their physical proximity to the mainland. These rivers are extremely erosion-prone and particularly during the high tides as well as during storm surges and cyclonic storms they tend to flood the land around (Rudra, 2014). The islands as well as coastal regions are embanked not to allow the saline water to ingress the soil and destroy agriculture. Total length of the embankments today is 3500 km, any breach in these embankments leads to flooding. The Indian part of this system is inhabited by close to 4.3 million people at a density of over a 1000 per sq.km. Local livelihoods comprise agriculture, fishing and collecting non-timber forest produce such as honey, seasonal tourism, manual daily wage labour and a small but growing formal employments mostly in government sector. It is also one of the most socio-economically 'backward' regions in the country (Anon, 2010, Ghosh, 2012) with high rates of poverty despite being highly valued for its biodiversity, stored carbon as well as rate of carbon capture (Ray et al., 2011; Mitra et al., 2011; Alongi, 2014). The region is a climate change hotspot and has recorded sea-level rise at a rate much higher than the global average (Hazra et al., 2002; Rudra, 2014; Chatterjee et al., 2015).

Various contesting constructions of the Sundarbans have emerged since the region was first brought under State control during the colonisation process in the 18th, 19th and 20th Centuries. The 'civilising mission' (Eaton, 1990, Richards and Flint, 1990) was the first Anglophone account, documented by WW Hunter (1875), a British surveyor and administrator in the 19th Century. Hunter's account was overtly romantic (Greenough, 1998), that of a mystic wilderness. Since the early 20th Century, scientific forest management was institutionalised after the 'resource extraction' and 'civilising missions' by the colonists were thought to be complete (Danda, 2007; Jalais, 2010). Since then, two disparate and parallel narratives have continued in the public sphere (in the Habermasean sense) – constituting the media, public documents from regional, national and international agencies (such as tourism promotion, UNESCO website) (Ghosh, 2017). Discourse over the importance of tigers and its habitat led to reinvigorated conservation efforts, following which UNESCO declared it a biosphere reserve of global significance in 1989. Interestingly, about 4.5 million people living in the region were not included in the programme initially, underscoring the discursive marginalisation of the population. After the realisation that conservation was not attainable without involving the local population, the region was included in UNESCO's man and biosphere programme in 2001[2]. The other discourse, though a perceptibly obscure one, has been propagated by local historians who argue that the region had a rich history of human settlement from much earlier periods dating back to 11th Century (Sircar, 1960).

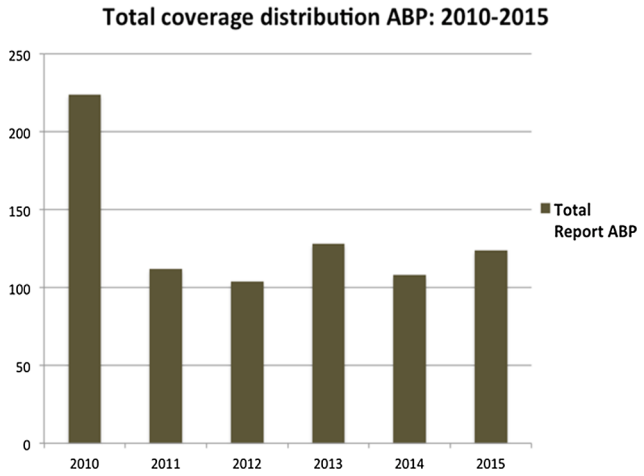

Fig. 2. Total coverage of the Sundarbans between 2010 and 2015 in *Anandabazar Patrika.*

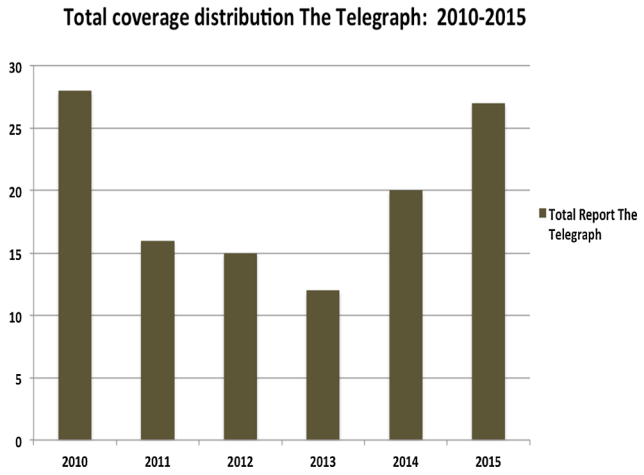

Fig. 3. Total coverage of the Sundarbans between 2010 and 2015 in The Telegraph.

In-migration of marginal communities was first organised by the colonists to populate the region which continued after creation of Pakistan and Bangladesh. The alienation between local, grounded discourses and the elite one is such that residents of Sundarbans consider themselves as mere 'tiger-food' (Jalais, 2010). In '*The Hungry Tide',* a fictional prose that attempts to reimagine this postcolonial geography, Amitav Ghosh presents a similar tension between 'location and dislocation' (White, 2013), between the western gaze and lived experiences of people in what he describes as the *'tide country'*. Aware about his simplistic or rather idealistic syncretism between worlds of knowledge and knowers (Ghosh, 2004b), Ghosh's prose challenge the dominant rhetoric of Western eco-centricism by retelling and retracing postcolonial environmental histories, remaining attentive to ways that geohistorical and embodied differences shape each-others' perspective (White, 2013; Ghosh, 2004b).

3. Sundarbans in the media: Methodology and rationale

We examine a Bengali newspaper (*Anandabazar Patrika,* henceforth ABP) (Fig. 2) and an English-language national Indian newspaper (*The Telegraph,* henceforth TT) (Fig. 3). We analyse the volume and nature of the discourse with regard to considerations of vulnerability, climate change and sustainable development across this deliberative space and try to understand how asymmetrical power relations differentially

[2] http://www.sundarbanbiosphere.org/html_files/sunderban_biosphere_reserve.htm **Accessed on July 7, 2017.**

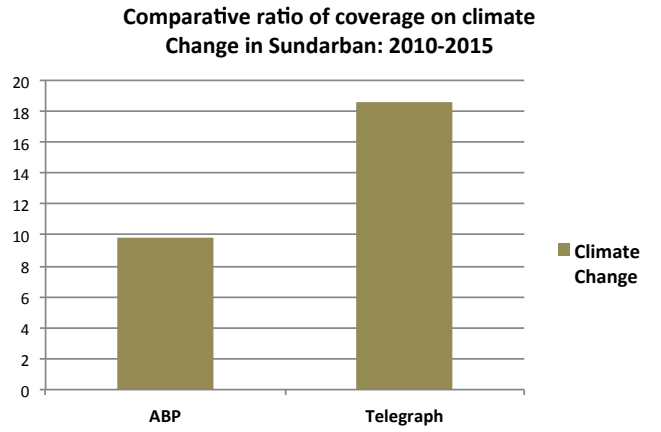

Fig. 4. Comparative coverage of Climate Change in *Anandabazar Patrika* and *The Telegraph.*

impact this discourse. What gains precedence and what remains absent between various accounts are important indicators about how people and their lived environments are represented and what drives those representations. Media representations help elucidate dynamic and contested spaces where climate and sustainability science, policy and politics operate at multiple scales, permeating the spaces of the 'everyday'. These dynamics have been described as 'cultural politics', accounting for processes behind construction of meaning and their negotiations – involving not only the portrayals that dominate the discourse, but also those that are absent from them or silenced (Derrida, 1978; Castree, 2006; Dalby, 2007). For example, media contribute to and often embody articulations of political identity and culture in the society (Dittmer, 2005). There are various processes which assist such processes, framing is one that can marginalize some discourses while contributing to the entrenchment of others (Castree, 2006).

ABP is the largest circulating Bengali daily newspaper in India with a daily readership greater than seven million and circulation of 1.25 million respectively[3]. *TT,* published by the same corporation that owns the *ABP*, is the highest circulating English language daily newspaper in Kolkata and West Bengal with a daily readership of over one million (IRS, 2014). The search term used for the media articles was 'Sundarbans', to help collate the total volume of articles that were published in both the newspapers on this socioecological system. The English newspaper, *TT*, could be sampled through LexisNexis™ while the Bengali newspaper samples were collected physically reading and scanning through both its print copies and the website. The total volume of coverage (number of articles) on the Sundarbans in *ABP* and *TT* was 800 and 118 reports respectively between 2010 and 2015, thus *ABP* having almost eight times the coverage on the Sundarbans than *TT*.

Subsequently, framing categories were developed 'qualitatively and inductively' (O'Neill and Nicholson-Cole, 2009) for the Bengali newspaper ABP by reflexive reading and carrying out intercoder reliability with five different coders. Intercoder reliability, more popularly used in open-ended and semi-structured interviews, can also be used for written or visual content, without which content analysis may not overcome biases of individual subjectivities (Lavrakas, 2008). Coders were all native speakers of Bengali language and educated up to the university post-graduate levels. Coding of different frames done by the author matched 89 per cent with all five independent coders pooled together. Because this work is more interested in uncovering the nature of discourse in the Bengali or the local language media, the frames were first developed for the Bengali newspaper and then applied to the English. Since most samples dealt with multiple subjects and offered multiple perspectives, 'focus' within each article was further categorised in three groups – primary, secondary and tertiary. Each category was assigned a score, primary with 1, secondary 0.75 and tertiary focus 0.5 to compute a total score by which the comparison of thematic coverage was made[4].

Of the five dominant methodological approaches to coding (hermeneutic, linguistic, a manual holistic, computer-assisted approach, and deductive – Matthes and Kohring, 2008), this study adopts manual holistic approach where frames are first generated by a qualitative analysis of some news texts and then are coded as holistic variables in a manual content analysis (Akhavan-Majid and Ramaprasad, 1998; Meyer, 1995; Segvic, 2005). Since the only selection criterion for the articles was Sundarbans, this method appeared most robust as the content of Bengali newspapers had to be manually and qualitatively coded. Bassett and Fogelman (2013) in their paper adopt a similar approach in sub-categorizing adaptation frames. The dominant focus was determined with headlines and the first paragraph or the 'intro' of the news report, the rest of the text was subsequently analysed for secondary or tertiary focus.

All the articles could be categorised in seven major frames:

(a) Climate change: Articles that discussed or reported impacts, mitigation or adaptation to climate change in the region
(b) Disasters: These articles discussed or reported disasters such as flooding, cyclones, any extreme weather event or its aftermath. Such events are common in the region. Reports of relief and rehabilitation, long term household impacts were also categorised under this frame. Disaster was further sub-categorised into local, smaller and large ones. The smaller ones are those not defined as 'disasters' by the state but have debilitating impacts on the population to the extent that merited news coverage (Fig. 6). These are described as 'everyday disasters' by Ghosh (2017) to imply their recurrence and lack of resilience of the vulnerable population. The larger disasters are those institutionally defined such as cyclones or floods.
(c) Wildlife-conservation: These articles discussed wildlife or biodiversity, its conservations, governance problems in conservation such as poaching, conservation efforts such as radio-collaring of tigers or camera trapping as tiger census measures.
(d) Development: These articles discussed issues such as poverty, health, education, infrastructure such as roads or hospitals. Development had six sub-categories: embankments which are vital instruments that support human habitation in the region, social issues, tourism, livelihood and poverty, power supply or electricity, communication and transportation.
(e) Migration: This category dealt with (out)migration, which has emerged as a focal point in the discourse about the region. Large scale movement of humans out of this region has often been perceived as a problem in the climate change adaptation studies, though lately it has been recognised as a positive adaptation measure (Black et al., 2011; Ghosh, 2017).
(f) Politics: Political developments from the region was categorised under this frame such as elections and political violence. However, politics over (under)development was not categorised under this frame but was placed in the development frame.
(g) Man-animal conflicts: The region is characterised by a high number of cases such as tiger and crocodile attacks because of the proximity between humans and wild animals. Such cases had high visibility and coverage.

These codes were reproduced for *TT* to facilitate the comparison across categories (see Fig. 7).

[3] **Audit Bureau of Circulation (India) 2014.**

[4] The first author is a native speaker of Bengali language and also educated up to postgraduate level.

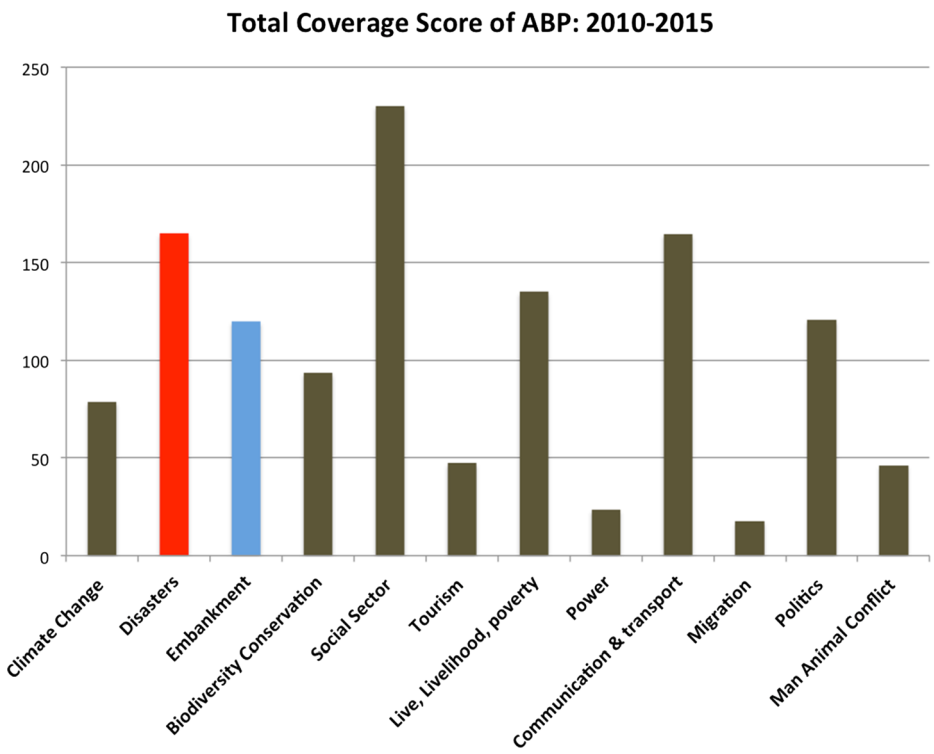

Fig. 5. Total coverage score of different issues on the Sundarbans in *Anandabazar Patrika*. Note: combining disaster and embankment, which are often co-produced, command maximum coverage.

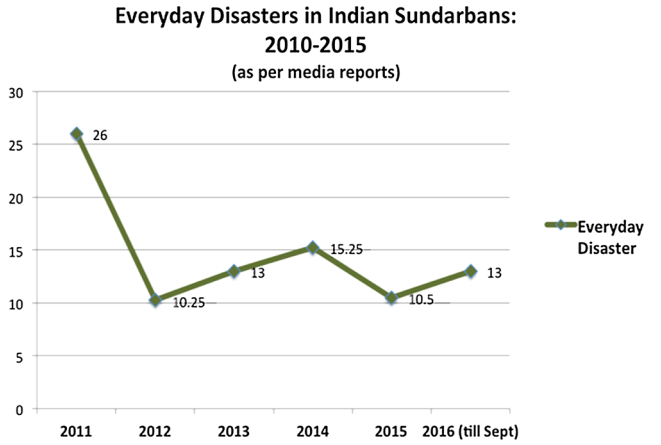

Fig. 6. Everyday disasters in the Sundarbans as reported in the *Anandabazar Patrika*.

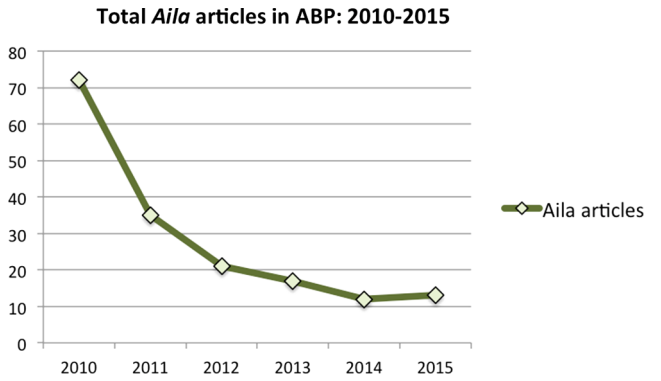

Fig. 7. Changes in occurrence in articles that mentioned or referred to cyclone Aila, 2010-2015.

4. Framing conflicts between the vernacular and the Anglophone

4.1. Local language, local disasters: Struggles against hostile ecology and climate, impoverishment and development deficits

In *ABP*, the coverage was found to be dominated by social or developmental concerns such as health, education and gender issues in general (Fig. 5). 'Communication and transportation' emerges as the second-most dominant concern, underscoring difficulties and risks involved in the daily lives of the people who travel through the 'watery-labyrinths' and 'storm-tossed islands' (Ghosh, 2004a) every day for their daily chores. Hazards involved in transportation and communication are also revealed in the large number of casualties (372, between year 2010 and 2015) from boat capsize events.[5] The third-most concern was the 'daily' smaller disasters, followed by the embankments, its construction, politics and incidents of breach or collapse (Fig. 5). However, when the two (disaster and embankment) are combined, it emerges as the dominant category of coverage, indicating their intertwined relationship and co-production (see Fig. 9). Embankments are essential instruments for human habitation in the delta, any breach in these structures would invariably lead to flooding, crop damage and household level losses. However, embankment collapse in different forms – breach, overtopping, erosion – has become a strikingly regular phenomenon in the recent years since a large cyclone (*Aila*) hit the region in May 2009 (Ghosh, 2017). The cyclone has emerged as a milestone event, generating coverage through next six years on its aftermath

[5] **It must be remembered moreover that the reports may not truly represent the total number of accidents or casualties, as smaller incidents never get reported. Apart from the accidents, a large number of reports highlight how boat operators flouted safety norms such as carrying double the permissible number of passengers. Dilapidated jetties, terrible road conditions and complete absence of transportation infrastructure even in medical emergencies are reported repeatedly. As the authors of these reports and journalists hail from the region, they cover what people described as the most problematic.**

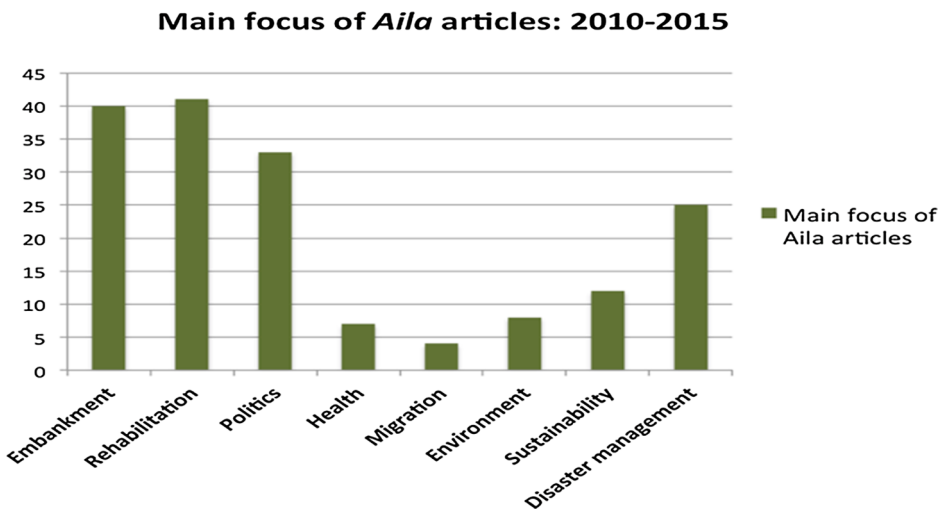

Fig. 8. Focus of the content on cyclone *Aila* in *Anandabazar Patrika*, 2010-201.

and failure of both the government and the community to recover (see Fig. 7). The subsequent flooding and inundation have become a regular occurrence – Ghosh (2017) documented a total of 93 such incidents between 2010 and 2016, terming them as 'everyday disasters' (Fig. 6). Reasons attributed to embankment collapse remains a combination of natural climatic/weather/oceanic events (tidal bores, storm surges, Perigean spring tides, cyclones) as well as structural or engineering flaws or weaknesses, lack of maintenance. However, the eventual outcome for the local residents remains a 'disaster' (Fig. 6*)*. 'Embankment' as a category constitute a dominant policy agenda in the region itself but is focused almost entirely on one embankment project in particular – called the *Aila Bandh* (Fig. 4) - the federal government project conceived as a flood mitigation and sustainability instrument after the cyclone *Aila*. It does not include an assessment of the sustainability of such an embanked regime or its cost-benefit analysis despite scientific critiques against its viability (Rudra, 2014; Ghosh et al., 2015). This indicates a failure to open up policy deliberations towards transformative pathways.

Narratives of disasters, embankments, social, livelihood and poverty overlap in the *ABP*, often difficult to disentangle (see Fig. 8). Poverty and livelihood insecurity that result from disaster events appear repeatedly in *ABP*; people referred to cyclone *Aila* as a landmark event and one of the main causes of destabilising life as a whole (see Figs. 7 and 8). The significance of smaller disasters in contributing to household level losses and diminishing resilience was demonstrated by Ghosh (2017) who reports almost 14 flooding events on average a year between 2010 and 2016. Impact of these events was succinctly captured by this quote from ABP:

"গত বছর আইলায়ে সব শেষ হয়ে গিয়েছিল আমাদের। কোনরকমে ধার-দেনা করে একটু একটু করে, গুছিয়ে মাথা তোলার চেষ্টা করছিলাম। কিন্তু ফের সমুদ্র বাঁধ ভেঙ্গে গ্রামে প্লাবন এসে সব তছনছ করে দিল"

"

"Last year, everything was lost in Aila (super cyclone-2009). Somehow, by borrowing and begging, we were trying to recover. But yet another embankment breach and inundation put everything in disarray again".

Embankment collapse – being the direct, physical and proximal cause of flooding – was thus inextricably linked to disasters which in turn often destroyed the embankments as well. In this way, one was incumbent on the other, as captured in this quote:

"সুন্দরবনের বেহাল নদীবাঁধ ঘুম কেড়েছে বাসিন্দাদের"

Decrepit embankments give sleepless night to the locals

While embankment and disasters were almost always coupled (see Fig. 9)– climate change – despite being a critical driver (though temporally intangible for the locals), was hardly coupled with disasters or socio-economic concerns. However, such coupling was common with biodiversity, indicating impacts of climate change on the biodiversity to have greater traction.

4.2. Embankments and disaster risk: Coupled but locked

ABP's coverage on disasters and embankment failures did not link disaster risk reduction[6] to the larger development paradigm of the region. Instead, these reports focused on immediate protection, ad hoc rehabilitation and political interference, underperformance (owing to corruption and bureaucratic lacuna) in the construction of embankments. The binary between embankment collapse and local level disasters led journalists to comfortably connect the two. For the locals also, this was the proximal cause of flooding (see Fig. 9). A high level of mistrust characterised the relationship between residents and the State, as evident here:

[6] Disaster risk reduction is the concept and practice of reducing disaster risks through systematic efforts to analyse and reduce the causal factors of disasters. Reducing exposure to hazards, lessening vulnerability of people and property, wise management of land and the environment, and improving preparedness and early warning for adverse events are all examples of disaster risk reduction. *UNISDR*, available at: https://www.unisdr.org/who-we-are/what-is-drr accessed on April 20, 2018.

"বাঁধ দেয়া হয় আর বাঁধ ভেঙ্গে যায়। যত ভাঙ্গন তত কন্ট্রাক্ট এবং তত কমিশন। এটাই সুন্দরবনের বাস্তব।"

Embankments are constructed to be broken. More erosion, more of the contracts and higher the commission. This is the reality of the Sundarban.

Local political actors and technologists offered three key arguments. The first one concerned shifting the responsibility of protection to the villagers and residents themselves by blaming them for their lack of cooperation in offering personal land to the embankment project. The second argument shifted the blame to the federal government for the accounting mechanisms, instituted as a part of the project, that were considered unrealistic in the region. Finally, ineffective technological design and weakness in the construction, as a direct outcome of the first two reasons, was held responsible for frequent breaches in these structures, as evident in this quote:

"গত ৩০ বছরে সুন্দরবনে যে ভাবে বাঁধ তৈরী হয়েছে, তাতে সব টাকাই জলে গেছে। এবার বাঁধ তৈরীর কারিগরির বিষয়টি নতুন করে ভাবতে হচ্ছে"

All the money has been wasted the way embankments have been constructed over past 30 years. We must rethink technological alternatives.

4.3. Absence of 'science' from disasters

An important aspect of the coverage was absence of the scientific, academic and expert communities from the disaster risk reduction discourse. While manager, bureaucratic and policy actors were represented in the discourse, there was little representation of the scientific community. When scientists were represented at all, they tended to be ecologists and conservationists and not oceanographers or river scientists. The regional forest department emerged as the most important actor among the custodians of the region because of a consensus over pride that the tigers and the mangroves evoked. As disasters shifted attention to the region, deliberations had a reinvigorated focus on sustainability of this 'ecological marvel', its animals and how the city of Kolkata will be destroyed if the region fails to act as a buffer in absorbing cyclones from the Bay of Bengal. Sundarbans, in many reports, was simply described as a 'cyclone shield' for the megacity of Kolkata (Calcutta) – a dominant narrative from scientists, journalists, political actors. This framing was frequently coupled with reports on gradual denudation of the mangroves and destruction of the ecology. Apart from the tigers, the only user value for the local and national elites, it seemed, was protection of Kolkata :

"সুন্দরবন না বাঁচলে কলকাতাও মরবে"

If the Sundarbans does not survive, Kolkata too shall perish

Dominance of biologists and ecologists indicated the former's stronger global alliance and control over the media in particular and discourses in general; also because the biologists talked about the tigers and ecologists about the mangrove, 'showing' the depletion of resources such as tigers or even iconic trees such as the *Sundari* (Zaman et al., 2013) which gives the name to the forest. Such framing helped kindling a sense of pride and immediate resonance among the elite audiences while the river science and geomorphological dynamics of an immature delta (Ghosh, 2017) remained much too esoteric and inexplicable for the readers of general interest daily newspapers.

4.4. Elite's romanticism: Conserving a mystique landscape

TT's coverage, as evident from Fig. 10, is clearly concentrated on biodiversity, conservation, climate change and tourism compared to *ABP*'s coverage on the disasters, socio-economic aspects, livelihood/poverty, communication and transportation problems. An

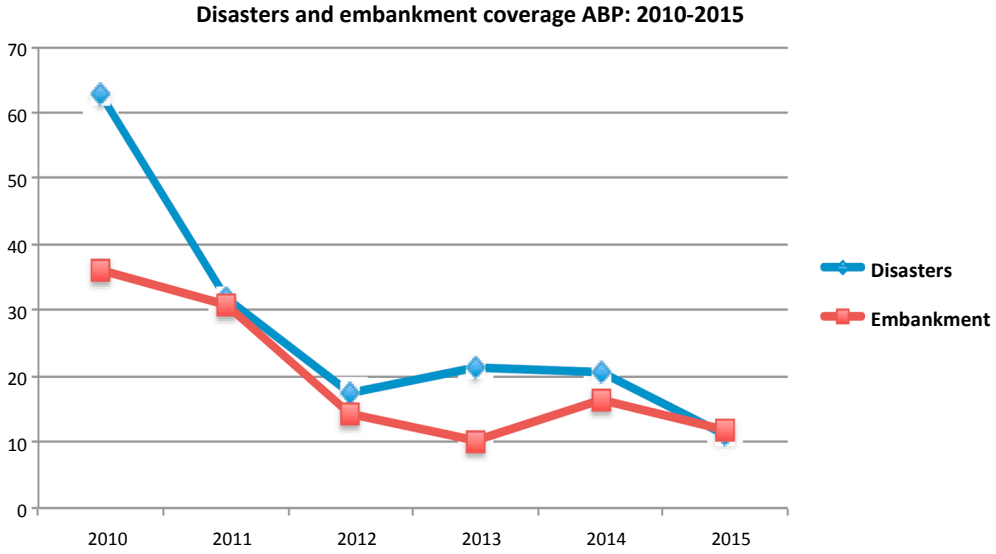

Fig. 9. Combined coverage of disaster and embankments in *Anandabazar Patrika*, 2010-2015.

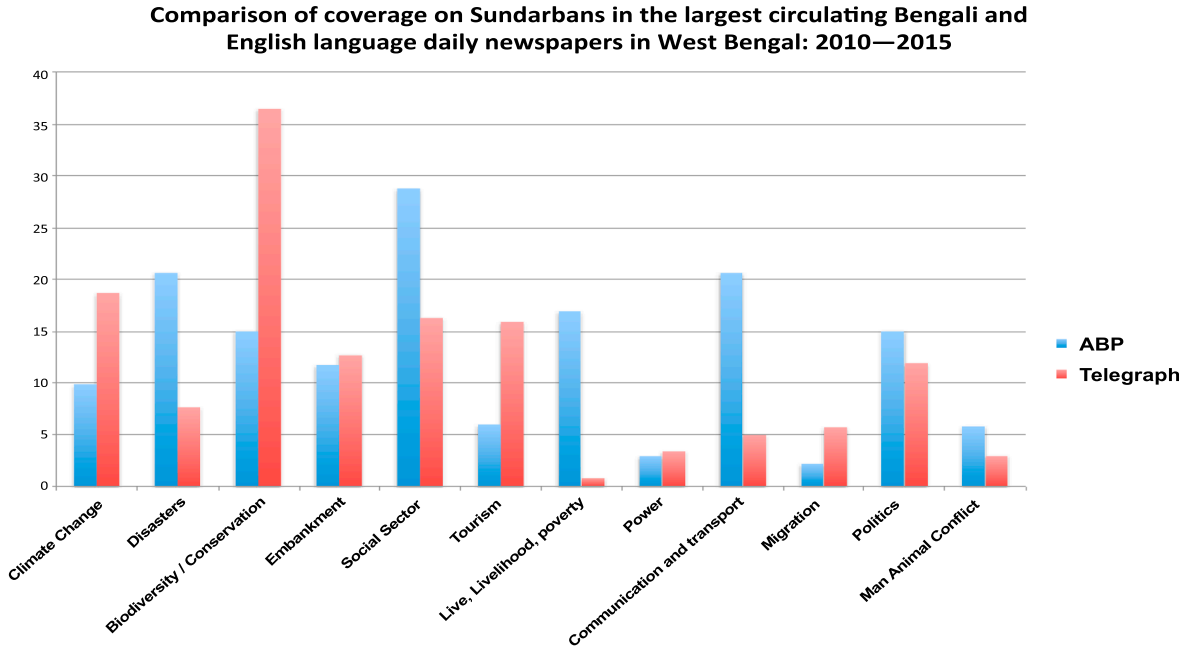

Fig. 10. Comparison of coverage on Sundarbans between *Anandabazar Patrika* (Bengali) and *The Telegraph* (English), 2010-2015 as percentages of respective total coverage.

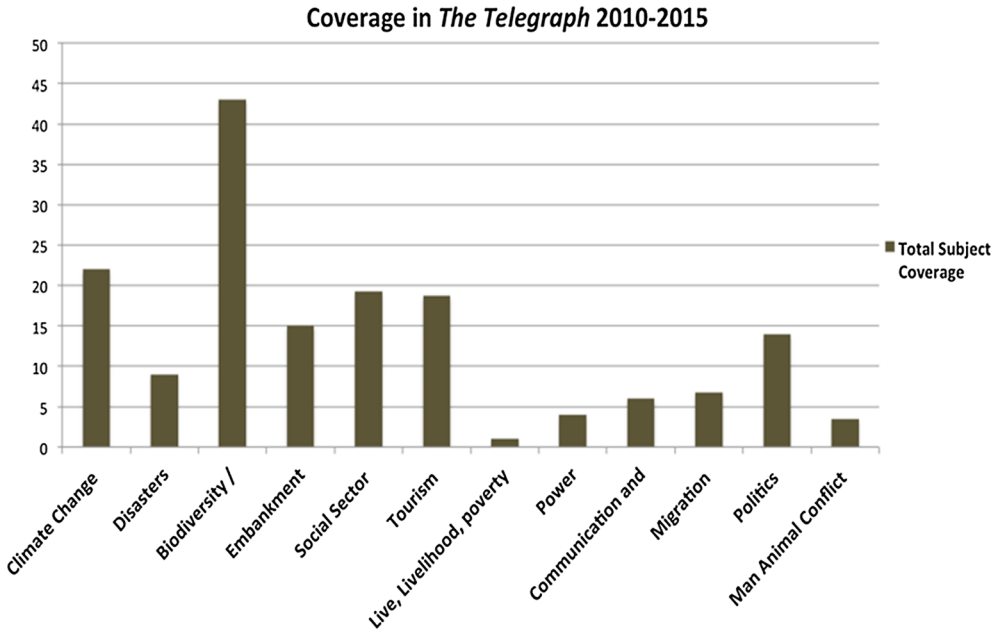

Fig. 11. Coverage distribution of *The Telegraph* 2010-2015.

overwhelming majority in TT – 40 out of 118 articles – were on biodiversity/conservation as framing and problematizing device for the Sundarbans, followed by climate change and tourism – 14 articles each out of 118. This reflects the elite's romanticisation about the region. With an increased global attention on the Sundarbans in view of climate change, protection of its symbol of pride (the tiger) has emerged as the critical agenda – the UNESCO 'heritage' tag legitimising what the region must be preserved for. Surprisingly, embankment commands similar coverage in both the newspapers because it is a political apparatus and a governance tool that *ostensibly* ensured conservation of both the humans and the non-humans. While the embankment politics and the federal project ensured that the subject received greater media attention, in *TT* articles on the embankment hardly linked to disasters but remained an apparatus of governance, which was not the case in *ABP*.

The human population in the Sundarbans has never been source of any particular pride for the urban middle classes who have shunned the tribal and people belonging to the lower castes who comprised the dominant human population in the Sundarbans (Cons, 2013; Shewly, 2013). These residents have been repeatedly defined as the 'problem' who encroach upon this beautiful biodiversity hotspot, endangering its survival, a discourse that has continued since the massacre in Marichjhapi[7] (Jalais, 2010; Chakrabarti, 2009). State's efforts to obscure

[7] **Marichjhapi incident refers to the forcible eviction of Bangladeshi refugees on 1979 in Marichjhapi island of Sundarban, West Bengal. The State first launched an economic blockade and then by coercion and force**

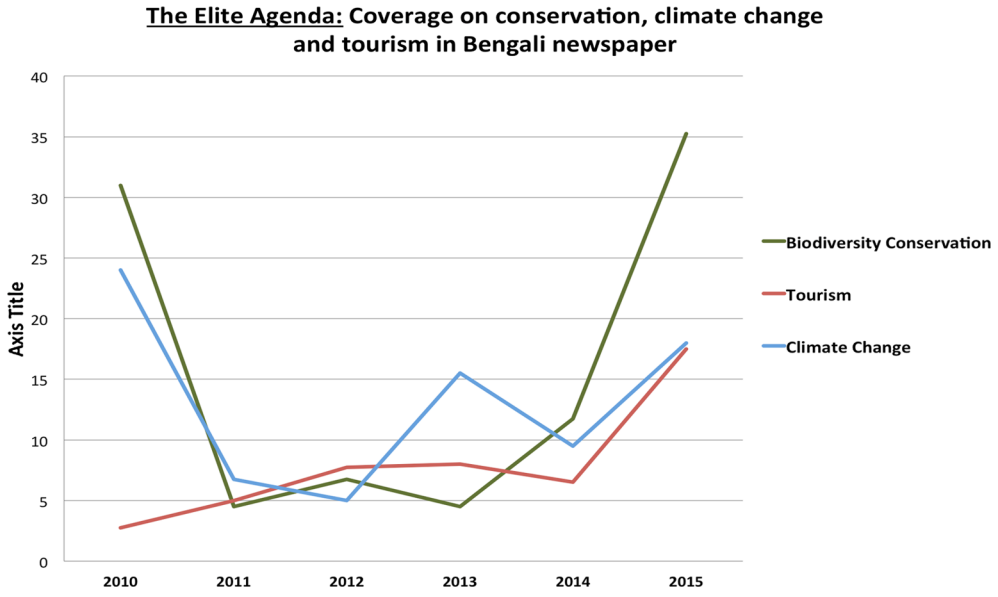

Fig. 12. Changing patterns of *Anandabazar Patrika* coverage: towards greater biodiversity conservation.

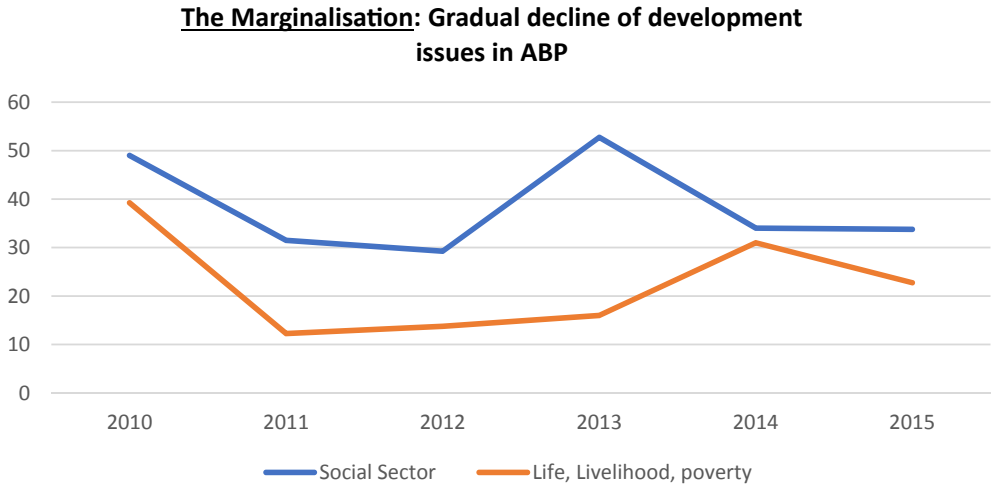

Fig. 13. Changing patterns of *Anandabazar Patrika* coverage: Social issues slowly decline.

Marichjhapi massacre from the public memory have been pronounced by using the tiger's image which *"reveals the privileging of an animal because it meets a higher aesthetic standard of beauty and prowess"* (Anand, 2008: 38). Sense of alienation in people, particularly refugees from different parts of the region who historically migrated to the Sundarbans to rebuild their lives away from the public gaze (Chowdhury, 2011) and also from the State control like the *Zomias* (Scott, 2014), has been very strong. Marichjhapi massacre testifies about a territorial fight between the State and these marginal populations which appear to be a predecessor to the newly emerging discursive marginalisation that reinforce the divide between the residents of the Sundarbans and the urban elites or the ruling classes (Sengupta, 2011). This quote from ABP succinctly captures the sense of alienation:

"রাষ্ট্রিয় নির্দয়তা ও বৃহত্তর সমাজের ঔদাসীন্যের মাঝেই এই সব ভূগোল খুঁজে নেয় পারস্পরিক

দয়া, সহযোগ, ভালবাসা, ভাঙ্গাগড়ার নিরবিছিন্নতায় জেগে থাকে সুন্দরবন|"

Amidst cruelty of the State and apathy of the larger society, these geographies seek out mutual kindness, cooperation, love – Sundarbans lives through the eternity of destruction and revival.

(*footnote continued*)
attempted to evict the refugees. Death of around 200 resulted from the police firing while an unknown number of people later succumbed due to subsequent starvation and diseases. Settlements were set ablaze by the state and villages were decimated by the police.

5. Validating prejudices in policy processes: Discursive shifts in the vernacular press

This bias, uncovered in the previous section, appears to have been instrumental in causing a steady decline in the coverage of socio-economic and human issues even in the *ABP*. In terms of the absolute volume, the elite agenda has edged ahead of the local in the last two years of the sampling period, thus marking a discursive shift even within the vernacular press. This indicates a growing risk that Weisser et al. (2014, 117) warn about, a possible appropriation of climate change or sustainability by particular interests or ideologies and by specific groups of actors, such as green colonialism and authoritarian regimes. Since 2013, *ABP's* coverage shows a sudden but profound increase in the coverage on biodiversity conservation, climate change and tourism. These reports describe a series of events – research, symposia, workshops – at the international, national and regional levels that reverberate the elite agenda. Ecological elitism coupled by alarmism appears to gradually replace the nuanced coverage on local social concerns (Fig. 12). There is a corresponding drop in the coverage of developmental issues *(*Fig. 13*)* in the ABP, which indicates a distinctive bias emerging towards conservation and ecological alarmism in Bengali language discourse at the expense of locally relevant issues.

The cosmopolitan tiger serves as the emblem of pride for the elite across the country and the region alike (Jalais, 2010; Anand, 2008; Chakrabarti, 2009). The tiger helps transcend barriers between languages, target audiences, classes and sub-cultures, helping the global messages find its local ally in the tiger that can subvert questions over hegemonies, elitism, social costs and human dignity. This is evident from a very low coverage volume on 'life, livelihoods and poverty' of the residents of Sundarbans in *TT* (Fig. 11) demonstrating a bias towards a 'nature' that excludes the 'human'. The local elite actors – both creators and consumers – have successfully created a sense of reality that represented the local residents as threats and (un)manageable inconveniences towards conservation goals. Note the quote from ABP clearly eliminating the human element from the Sundarbans, though they are equally vulnerable as the nonhumans (Ghosh, 2017):

"সুন্দরবনের বাঘ, ঘড়িয়াল, সুন্দরী গাছেদের ভোট থাকলে তাদের এভাবে মরতে হত না!"

If the tigers, gharials, sundari trees had suffrage, they did not have to die like this

5.1. Burgeoisie conservationism

Alarmism over physical disintegration of the region in the wake of climate change reinforces focus on the conservation agenda. Various violations of federal conservation regulations by the tourism infrastructure built by the local government recently across the region emerges as convenient allies in this discursive project. Two sets of elite agendas clash here. Prestige that biodiversity and the tigers elicit and protection for the city of Kolkata (cyclone shield, waste accumulation) that ecosystem services offer. The other elite agenda – ecotourism – represents the agenda for local elites, weekend travellers, and that of the local government – as a proxy to strengthen the local economy. The first set of agendas demand demolition of structures such as hotels and resorts while the latter demands their regularisation by altering the provisions of law – arguing tourism to be essential for the local economy. However, even this power struggle between the regional government (state of West Bengal) and the federal government (Ministry of Environment, Forest and Climate Change) over conservation and tourism largely excludes local residents from the discussion. Two arms of the State now fight legal battles over their respective custodies and power over the region in a top-down governance hierarchy – *ABP*'s shift indicates a discursive edge of the conservationists who tacitly prefer depopulation of the Sundarbans (Gibson et al., 2016).

5.2. Between the technologically tangible and ideologically invisible

Apart from biodiversity conservation, the other discourse that dominates the policy is justification for the embankments. Both vernacular and English language media's positions on the issue of embankment seem to converge here. Every time there is an embankment breach, it destabilises life, induces excruciating hardships on the people. Thus, local struggles are attributed uncomplicatedly to embankment failures, shifting the discourse away from a deeper analysis on the drivers of long-term sustainability of the region. Media reports proverbially reiterate (somewhat misleadingly!) the justification for the federal embankment project or *Aila Bandh* (see Ghosh, 2017 for details), offering little space to the scientific disagreement over their efficacy or questioning the technology choices for the embankment themselves (bio, ring, retired or cement-concrete etc.). For *ABP*, embankments are the most critical instrument to reconcile local, daily hazards of flooding and inundation; which also reinforces the socially constructed belief – locals unanimously appeal for better embankments in *ABP*'s coverage. They attribute technological weaknesses and corruption in the construction of the embankments as the reason behind their failures, whereas scientists claim otherwise (Rudra, 2014; Sarkhel, 2015). Political actors highlight problems over land acquisition and associated lack of social cooperation, shifting and locking the responsibility of physical security of the region and the people to the residents themselves. The lock-in fails to open up deliberations towards transformative, sustainable trajectories. The *ABP* discourse does not question the social, political or scientific '(ir)rationality' of the embankments, framing it within the praxis of non-performance of the state and non-cooperation of the local residents.

5.3. Linguistic limitations: When the Anglophonic meanings are lost in vernacular translations

Linguistic and cultural limitations of Bengali language to convey concepts of 'sustainability', 'mitigation', 'adaptation' 'resilience', 'adaptive capacity' and 'transformation' led vernacular journalists to employ 'alarmist' or 'tipping point' framings with greater fervour. Capacity constraints of journalists have been identified as one of the shortcomings in communicating the global phenomenon into locally relevant and comprehensible texts (Boykoff, 2010). Bengali journalists could not devote time to develop their own knowledge about climate change or sustainability science or develop new vocabulary capable of explaining the global scientific and technological constructs (findings from personal interviews). Apart from the absence of necessary vocabulary, complexity of the subject as well as lack of consensus among various actors create further difficulties for journalists who have to maintain a balance following journalistic norms (Boykoff and Boykoff, 2007).

Articles, which discuss coping strategies employed to various environmental vulnerabilities and hostilities by the locals have been categorised as 'adaptation' in this research – otherwise the category would not have a single news item. This is because not a single article featured the Bengali equivalent for adaptation *'Abhiyōjana'* – which is not only archaic but also carry an exclusively biological sense. Coping or adjustment, poorer alternatives to adaptation, is represented in Bengali only by '*Māniẏē neya'*. Climate change mitigation did generate higher coverage in *ABP* facilitated by a more convenient application of risk-responsibility-victimisation frame prevalent in the Indian media (Billet,

2010; Boykoff et al., 2013). By exporting and outsourcing the responsibility to the global North and employing a victimisation frame, the vernacular press fails to foster dialogues between the on-going scientific inquiry, policy-makers and the lay publics. In *TT,* the elitist bias in its higher volumes of mitigation content and low coverage on issues of justice, risk, and adaptation were consistent with findings of Billett (2010) and Boykoff et al (2013).

6. Conclusion

Analysing local language media discourses of climate change and comparing it with English language one provides important lessons and insights into what constitutes local vulnerabilities. The study has demonstrated how the hegemony of technology markets and knowledge politics find allies to control the local Anglophone and even the local language (Bengali in this case) media discourse, and how local socioeconomic concerns are marginalised in favour of grand meta-discourses such as conservation of charismatic mega-fauna (tiger in this case). It also highlights cognitive and linguistic barriers in translating the messages of climate change and sustainable development across languages and cultures around the globe. This appears a serious impediment in fostering participation and inclusion. The local hierarchy of concerns in the Sundarbans appears completely different, constituting smaller but recurrent, temporally squeezed disasters – inextricably coupled with embankments – that heavily undermine resilience of the population. This is coupled with extremely poor levels of all five capitals; transportation in particular seemed the second biggest concern of the locals. This 'slow violence', 'its calamitous repercussions playing out across various temporal scales' (Nixon, 2011) is getting increasingly marginalised in the discourse. The development paradigm of the region seemed confined (and condemned!) in the disaster-embankment nexus in particular and neoliberal growth ideals in general. The English language discourse, frames the hierarchy concerns over conservation, wildlife, tourism and climate change, romanticising the region as well as marginalising the local agenda.

A significant barrier in translating both the local and the scientific framings of climate change and sustainability for effective mutual consumption and providing actionable information impedes the process of reconciliation. This has multiple implications. The top-down, scientific discourse from global agencies such as IPCC remains incomprehensible to the local residents and the journalists alike. Integrating local knowledge through social, reflexive learning with scaled-up global climate change policy debates (Fernández-Llamazares et al., 2015) embeds justice in the adaptation or resilience project, as Popke et al. (2016) shows in Jamaica. Greater attention to vulnerability in the discourse helps advance the goals of climate justice in the policies, argues Adger (2006) as well, which remains absent in the Sundarbans.

However, instead of recognising the liminal space as a site to negotiate the relationship between postcolonial geographies and identities (Fletcher, 2011), narratives even in the Bengali newspaper are increasingly being influenced by the elite constructions that treat the Sundarbans as a waste accumulator, cyclone shield for the elite (in Kolkata), provider of ecosystem services and products (such as clean air, fish or honey). This reveals how sustainability and climate geopolitics – when dealing with socio-ecological systems in the global South – continues to treat the subaltern as subjects to be governed but not be allied with (Spivak, 1982). By locating how power shapes the discourse that constructs an ecosystem distanced from the local cultural 'others' in the colonisation project demonstrates "the extent of penetration of colonial discourse" (Kapoor, 2002: 656) even in the postcolonial patterns of development. It also helps explain the locked patterns of ecosystem governance by revealing embedded 'microtechnics of (colonial) power' (Bhabha, 1994: 116) in them and their dependency in the postcolonial world. As an NGO representative lamented in one of the Bengali news reports, Sundarbans was a global laboratory for agencies such as UNESCO, IPCC, IUCN, WWF and the World Bank as well as for researchers from across Northern universities (Ghosh, 2017).

This is why narratives about local vulnerabilities, risks, lack of resilience as well as aspirations and opportunities need to find prominence in the discourse to enable inclusive and participatory policy spaces. These narratives or subaltern stories have the potentials to evolve into sophisticated theories if the theory/practice binary is avoided that generally *'worlds'* the Third World (Spivak, 1988). Increasing marginalisation of the local concerns and their overall representation in the discourse now threaten to evolve policies which eliminate the humans, for example, a depopulation agenda for the region tacitly dominate the discourse) (Gibson et al 2016). On the contrary, deliberations over smaller, everyday disasters – which actually cause much greater losses compared to one large extreme weather event such as cyclone (Ghosh, 2017) – are absent in the Anglophone media discourse. However, it is important to avoid polarised positions – a mix of pragmatism while uncovering diverse *'local'* stories and allying with them can help better sense-making of situations (Chakrabarty, 2014), which is where future research can productively engage.

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